ANNUAL SURVEY CHECKLIST FOR CHEMICAL TANKER

Ship Name: **Report No.:** **I.R. No.:**

DOCUMENTATION
STATUTORY CERTIFICATES Valid Statutory certificates available on board.
APPROVED TRIM & STABILITY INFORMATION Confirmation of availability of trim and stability booklet approved by administration.
MANOEUVRING BOOKLET Confirmation that the manoeuvring booklet is on board and that the manoeuvring information is displayed on the navigating bridge.
FIRE CONTROL PLANS Verification of proper posting of fire control plans (including duplicate sets permanently stored in a prominently marked weathertight enclosures outside deckhouse.
STEERING GEAR ENTRIES REQUIRED BY SOLAS/FLAG Verification of entries made in the ship's log for departure steering checks & Emergency steering drills.
DAMAGE STABILITY Availability of damage stability information.
LOADING MANUAL Verification that vessel has an approved Loading Manual.
I.G. SYSTEM OPERATIONAL MANUAL Verification for availability of I.G. Instruction manual (operation, maintenance, safety, health hazard etc.)
DAMAGE CONTROL PLANS & BOOKLET Verification that damage control plan and booklet are available. (Note: Applicable for vessels of 500 GT and over, keel laid on or after 01/01/2009.)
ESP DOCUMENT Availability of ESP documents on board
THE SHIP STRUCTURE ACCESS MANUAL Checking the Ship Structure Access Manual. (Note: Applicable for 500 GT and over, constructed on or after 1st Jan. 2006)
CONSTRUCTION DRAWINGS MAINTAINED ON BOARD Confirmation that structural alterations performed, if any, have been approved by the classification society and reported on the as-built drawings kept on board. (Note: applicable for ship constructed on or after 1st Jan. 2007)
DOCUMENT OF APPROVAL FOR STABILITY INSTRUMENT Confirmation vessel is provided with DOA for stability instrument. (Note: Applicable for new vessel keel laid on or after 01/01/2016 and existing vessel first renewal survey on or after 01/01/2016)
NATIONAL REQUIREMENTS / CODE Availability of applicable code (Note: (IBC-for ships whose keel was laid on or after 01-06-1986 / BCH Code for ships built before 01-06-1986 but after 31-12-1976) or National Requirements and Material Safety Data sheets for the carriage of cargoes.)
P & A MANUAL Verification that vessel has an approved P & A Manual.
EMERGENCY TOWING PROCEDURES Confirmation that ship specific emergency towing procedures available on board.
COATING TECHNICAL FILE Confirm that Coating technical file is available on board and maintained. (Note: Applicable for ships of not less than 500 gross tonnage provided with dedicated seawater ballast tanks for which the building contract is placed on or after 01/07/2008 or the keels of which are laid on or after 01/01/2009 or which are delivered on or after 01/07/2012.)

Condition to be reported using number code as follows:

1. When examined found to be satisfactory and/or examined/tested satisfactory and/or confirmed arrangements exist in satisfactory condition. No repairs considered necessary this time.
2. Repairs now recommended and were carried out satisfactorily. After repairs found to be satisfactory and/or examined / tested satisfactorily and/or confirmed arrangements exist in satisfactory condition.
3. Repairs now recommended and remain outstanding.
4. Opportunity to examine/test was not provided this time. Remains outstanding.

NA - Not Applicable.

SHIP CONSTRUCTION FILE

Confirmation that Ship Construction File is on board.

CARGO INFORMATION

Confirmation that table giving the filing ratio for cargo tank at various densities provided and information related to the chemical and physical properties of the product provided including provision for measure taken in an accident.

CARGO TRANSFER PROCEDURE MANUAL

Confirmation that manual covering procedure for cargo transfer, tank, cleaning, gas freeing and also compatibility information as to material of construction, protective lining and coating is provided.

ALTERNATIVE DESIGN & ARRANGEMENT

Confirmation that where applicable, the approved documentation for alternative design and arrangement is on board.

CARGO RECORD BOOK

Confirmation that Cargo Record Book is on board.

HARMONIC DISTORTION RECORD FOR VESSEL FITTED WITH HARMONIC FILTER.

Verification of annual measurement record of harmonic distortion level at bus bar (Applicable for vessel keel laid before 1 July 2017 and for any modification on electrical distribution system on existing vessel, total distortion measured along with equipment running at the time of measurement to be recorded)

OPERATIONAL MANUAL FOR EFFECT OF HARMONIC FILTER

Verification that following document are available on board.

1) Effect of failure on harmonic filter on electrical distribution system.
2) Permitted modes of operation for maintaining harmonic distortion level within acceptable limit during normal operation and during failure of filter.
3) Approved copy of relaxation on allowable distortion limit, if any
4) Record of harmonic distortion level measured.

(Note: Applicable for vessel keel laid on or after 01 July 2017 and on exiting ship retrofitted with harmonic filter on or after 01 July 2017.)

IGF

Examining the logbooks and operating records with regard to correct functioning of the gas detection systems, fuel supply/gas systems, etc.

Confirmation that the manufacturer/builder instructions and manuals covering the operations, safety and maintenance requirements and occupational health hazards relevant to fuel storage, fuel bunkering, and fuel supply and associated systems for the use of the fuel, are available on board.

Confirmed availability of IGF Code, or national regulations incorporating the provisions of IGF Code is on board.

Confirmed availability of maintenance procedures and information for all gas related installations and records for same are maintained.

Confirmed availability of suitable emergency procedures covering all aspects of fuel handling systems including procedures for the emergency shutdown of any equipment that has the potential to become hazardous under certain abnormal condition.

Confirmed that necessary information and procedures are in place for maintenance of electrical equipment installed in explosion hazardous spaces and a record of maintenance is available. The procedure provides that the inspection and maintenance of electrical installations in explosion hazardous spaces shall be performed in accordance with recognized standard.

Confirmed availability of operational procedures including fuel handling manual to ensure trained personnel can safely operate the fuel bunkering, storage and transfer systems.

Verified that inspection/survey plan for the liquefied gas fuel containment system approved by the Administration is on board.

(Note: The inspection/survey plan identify aspects to be examined and/or validated during surveys throughout the liquefied gas fuel containment system's life and, in particular, any necessary in-service survey, maintenance and testing that was assumed when selecting liquefied gas fuel containment system design parameters.

The inspection/survey plan may include specific critical locations where effective defect or crack cannot be assured.)

CLASS CERTIFICATE

Confirmation that the Class annual/Intermediate/renewal* survey completed satisfactorily and Class Certificate endorsed/interim certificate issued* on …….

Condition to be reported using number code as follows:

1. When examined found to be satisfactory and/or examined/tested satisfactory and/or confirmed arrangements exist in satisfactory condition. No repairs considered necessary this time.
2. Repairs now recommended and were carried out satisfactorily. After repairs found to be satisfactory and/or examined / tested satisfactorily and/or confirmed arrangements exist in satisfactory condition.
3. Repairs now recommended and remain outstanding.
4. Opportunity to examine/test was not provided this time. Remains outstanding.

NA - Not Applicable.

WEATHER DECK
ACCOMMODATION, SERVICE, MACHINERY SPACES & WHEELHOUSES Verification gas tight condition of wheelhouse doors and windows, fixed type side scuttles and windows in superstructure and deckhouse ends facing the cargo area and containing accommodation, service, machinery and control spaces and gas tight bulkhead penetrations.
SEPERATION FROM ACCOMODATION, SERVICE SPACE Confirmation that tanks containing cargo or residues of cargo are suitably segregated from accommodation, service and machinery spaces and from drinking water and stores for human consumption, that cargo piping does not pass through any accommodation, service or machinery space other than cargo pump rooms or pump rooms and cargoes are not carried in either the fore or the aft peak tank
SPACE NOT NORMALLY ENTERED Confirmation that double bottoms, cofferdams, duct keels, pipe tunnels, hold spaces and other spaces where cargo may accumulate are capable of being efficiently ventilated to ensure a safe environment when entry into the space is necessary and that, when appropriate, permanent ducting is provided and any ventilation fans comply with non-sparking construction in hazardous locations.
VENTILATION OF SPACE IN THE CARGO AREA NORMALLY ENTERED DURING CARGO OPERATION Examination of arrangement of mechanical ventilation of space for satisfactory condition and verification that it is controlled from outside space, Warning notice placed, if it is the extraction type, with extraction from below the floor plates, unless the space houses electrical motor driving cargo pumps when it should be of the positive pressure type. The ducting does not pass through accommodation, machinery and service space and that exhaust duct are clear of the ventilation inlet and opening to such space.
CARGO TANK OPENINGS Examination of cargo tank openings including gaskets, covers, coamings and flame screens.
BUNKER TANKS Examination of flame screens on vents to all bunker tanks.
CARGO & PROCESS PIPING AND FITTINGS Verification for condition of cargo, bunker, ballast and vent piping system including vent masts and headers and devices to prevent the passage of flame on vents to all bunker, oily-ballast and oily-slop tanks and void spaces, as far as practicable. Examination of associated expansion arrangements and identification / markings on cargo and process piping and valves. The verification to include condition of removable pipe lengths/other approved equipment necessary for cargo operation.
CARGO TRANSFER ARRANGEMENTS Examination of the cargo transfer arrangements and confirmation that any hoses are suitable for their intended purpose and, where appropriate, type-approved or marked with date of testing
CARGO TANK VENTING ARRANGEMENT Verification of cargo tank venting arrangements. Where controlled tank venting system is employed such verification to include pressure / vacuum valves, mast raisers, devices to prevent passage of flames into the cargo tanks and cargo tanks gas freeing arrangements (on ships constructed on or after 01-07-2002 the controlled venting system should consist of a primary and a secondary means). Confirmation that suitable provision is made for drainage of vent lines and that no shut-off valves or other means of stoppage, including spectacle or blank flanges, are fitted either to the individual vents or to the header, if the vents are combined or either above or below pressure/vacuum relief valves with closed vent systems.
EMERGENCY TOWING ARRANGEMENT Examining the towing arrangements and verification of operational readiness.
FIRE DOORS AND CONTROLS Examining and Operation of manual/automatic fire doors, no holding back arrangements exist.
ANCHORING & MOORING EQUIPMENT Examining the anchoring equipment & mooring equipment. At renewal survey, during the examination, anchors are lowered and raised using the windlass.
SOUNDING PIPES Sounding pipes, including self-closing devices on short sounding pipes.
HATCHWAYS Examination and testing of hatchways on freeboard and superstructure decks including efficient condition of closing appliances.
WEATHER DECKS Examination of weather decks, ships side plating above waterline.

Condition to be reported using number code as follows:

1. When examined found to be satisfactory and/or examined/tested satisfactory and/or confirmed arrangements exist in satisfactory condition. No repairs considered necessary this time.
2. Repairs now recommended and were carried out satisfactorily. After repairs found to be satisfactory and/or examined / tested satisfactorily and/or confirmed arrangements exist in satisfactory condition.
3. Repairs now recommended and remain outstanding.
4. Opportunity to examine/test was not provided this time. Remains outstanding.

NA - Not Applicable.

DRIP TRAYS (IGF)
Verified that portable and fixed drip trays are in satisfactory condition.
FREEBOARD MARKS Verification of freeboard marks.
VENTILATORS Examination and or testing of ventilators including efficiency of their closing appliances.
WINDOWS, SIDE SCUTTLES AND DEAD LIGHTS Examination and or testing of windows, side scuttles and dead lights, flush deck scuttles, ash shoots & other openings.
SCUPPERS, SANITARY DISCHARGES, VALVES AND CONTROLS Examination scuppers and sanitary discharges and valves together with valves and their control gear.
SKYLIGHTS AND FIDDLEY OPENINGS Examination and or testing of skylights and fiddley openings including their closing appliances.
EXPOSED CASINGS,DECK HOUSES, COMPANION WAYS AND SUPERSTRUCTURES Examination and / testing of exposed casings, deck houses, companionways and superstructure bulkheads including closing appliances, openings on freeboard & superstructure decks.
GUARD RAILS AND/OR BULWARKS Examination of the condition and arrangement.
COLLISION & WT BULKHEAD OPENINGS Examining the collision and the other watertight bulkheads as far as can be seen. Watertight bulkheads penetrations examination as far as practicable for satisfactory condition.
MASTS AND STANDING RIGGING Masts, Derricks & Crane columns including their standing rigging.
AIR PIPES Examination and or testing of air pipes including efficiency of their closing appliances, weld connection between Air pipes and deck plating. Examining and confirming that vents from bunker tanks and ballast tanks (with cathodic protection) are equipped with flame screens.
SAFE ACCESS TO BOW Examining arrangements of safe access to bow including trends, side stringer cross members, decking, deck plate, stanchion, rigid hand rails, hand ropes, support points, shelter and confirmation that it is constructed of fire resistant and nonslip material.
BOW AND STERN LOADING Confirmation, when applicable Bow or Stern loading and unloading arrangement in order and testing of means of communication and remote shut down for cargo pump in satisfactory condition.
GANGWAYS, LIFELINES AND ACCOMODATION LADDER Satisfactory examination of various items pertaining to accommodation ladder, gangways, Davits, Winches. Verification of inspection and maintenance records.
TOWING AND MOORING EQUIPMENT Confirmation that the towing and mooring equipment is properly marked with any restriction associated with its safe operation for ships constructed after 01/01/2007
NEW INSTALLATION OF MATERIALS CONTAINING ASBESTOS Confirmation that new equipment containing asbestos was not fitted on board since last survey.
ACCESS TO AND WITHIN SPACES IN AND OF THE FORWARD CARGO AREA Verification of the permanent means of access where appropriate of the internal spaces as far as practicable.
UPGRADATION / REPAIR TO COATING Confirmation that maintenance, repair and partial recoating had been done as per manufacturer's specification using acceptable coating system, suitable surface preparation and adequate film thickness under the supervision of coating manufacturer's representative/coating inspector. These had been verified through stage/patrol inspection during survey and considered acceptable. (Note: Ballast tank for which coating condition was upgraded to "GOOD" this time during survey are to be listed in the "Remark" section.)
FREEING PORTS Examination of the condition and arrangement including shutters and crew protection bars

Condition to be reported using number code as follows:

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2. Repairs now recommended and were carried out satisfactorily. After repairs found to be satisfactory and/or examined / tested satisfactorily and/or confirmed arrangements exist in satisfactory condition.
3. Repairs now recommended and remain outstanding.
4. Opportunity to examine/test was not provided this time. Remains outstanding.

NA - Not Applicable.

MAINTENANCE, REPAIR AND PARTIAL COATING OF DEDICATED BALLAST TANKS

Confirming that maintenance, repair and partial coating of dedicated ballast tanks, as appropriate, are recorded in the coating technical file and the maintenance of the protective coating is included in the overall ship's maintenance scheme.

LOADING INSTRUMENT

Availability of an approved loading instrument together with it's operational manual and verification of test cases.
[Capable of verifying compliance with intact and damage stability requirement, for new vessel keel laid on or after 01/01/2016 and existing vessel first renewal survey on or after 01/01/2016]

MACHINERY SPACES

MACHINERY AND BOILER SPACES

Confirming that the machinery, boilers and other pressure vessels, associated piping systems and fittings are so installed and protected so as to reduce to a minimum any danger to persons on board, due regard being given to moving parts, hot surfaces and other hazards.

FIRE/EXPLOSION HAZARDS

i) Propulsion system and auxiliary machinery, boilers, all pressurized systems (steam, pneumatic, hydraulic) and their associated fittings were examined to see whether they are being properly maintained and with particular attention to the fire and explosion hazards.
ii) Verification that oil / water leakages, accumulation of oil, with potential source of ignition does not exist in the machinery spaces. Leakages if any have been dealt and source of leakages rectified.
iii) Confirmation that floor plates & gratings are secured and found to be in order.

STEERING GEAR

All main and auxiliary steering arrangements and their associated equipment and control systems were examined and tested. Steering chains are verified for wear and tear and it was ensured wear is within 12% of the original rule diameter. Confirmation that various alarms required for hydraulic power operated, electric and electro-hydraulic steering gears are, operating satisfactorily and that the recharging arrangements for hydraulic power operated steering gears are being maintained. Log entries made in accordance with statutory requirements were verified where applicable. Confirm the requisite arrangements to regain steering capability in the event of the prescribed single failure are being maintained. Floor to be anti skid and guard rails.
Confirm, that the required arrangement to regain steering capability in the event of the prescribed single failure is maintained.

MEANS OF COMMUNICATTION

All means of communication between the navigating bridge and the machinery control positions including engine room telegraph, as well as the bridge and the main / alternative steering position, if fitted, are tested. Where ships having emergency steering positions there are means of relaying heading information and, when appropriate, supplying visual compass readings to the emergency steering positions. Confirmation that means of indicating the angular position of the rudder is operational.

BOILERS AND PRESSURE VESSELS

Periodical Surveys of boilers and other pressure vessels have been carried out as required by the Rules and the safety devices have been tested. External visual examination. External examination of boilers including test of safety & protective devices and test of safety valve using it's relieving gear. For exhaust gas economisers, review of engine log book to verify that Chief Engineer has tested the safety valves at sea within the window period of Annual Survey.

REMOTE CONTROLS

Examining the means for the operation of the main and auxiliary machinery essential for propulsion and the safety of the ship, including when applicable, the means of remotely controlling the propulsion machinery from the navigating bridge (including the control, monitoring, reporting, alert and safety actions) and the arrangements to operate the main and other machinery from a machinery control room

PROPULSION MACHINERY

Confirmation that normal operation of the propulsion machinery can be sustained or restored even though one of the essential auxiliaries becomes inoperative.

SEA WATER PIPE EXPANSION JOINTS

Examining visually the condition of any expansion joints in sea water system.

BILGE PUMPING ARRANGEMENT

Examination of the bilge pumping systems and bilge wells including operation of each bilge pump (including hand pumps and eductors), extended spindles and level alarms, where fitted. Operational confirmation of emergency bilge suction and bilge-pumping system for each watertight compartment and drainage from enclosed cargo spaces situated on freeboard deck.

Condition to be reported using number code as follows:

1. When examined found to be satisfactory and/or examined/tested satisfactory and/or confirmed arrangements exist in satisfactory condition. No repairs considered necessary this time.
2. Repairs now recommended and were carried out satisfactorily. After repairs found to be satisfactory and/or examined / tested satisfactorily and/or confirmed arrangements exist in satisfactory condition.
3. Repairs now recommended and remain outstanding.
4. Opportunity to examine/test was not provided this time. Remains outstanding.

NA - Not Applicable.

FIRST START ARRANGEMENT

Operational confirmation of the means provided to bring the machinery into operation from the dead ship condition without external aid.

AUTOMATION

General Examination of automation equipment. Operation of safety devices, bilge level detection and alarm systems and control systems. Examination and testing of the general emergency alarm system and confirmation of the engineer's alarm that it is clearly audible in the engineer's accommodation

SCHEDULE OF BATTERIES

Schedule of batteries for essential and emergency services available on board and maintenance being done as per this schedule.

MACHINERY SPACE VENTILLATION

Confirmation that machinery space ventilation is in good working condition.

EMERGENCY GENERATOR ROOM VENTILATORS ARRANGEMENT

Verification that following requirement of emergency generator room ventilation louvers and its closing appliance examined/ tested and found satisfactory.

a) Manual or power operation of louvers and its closing appliance.
b) Operating instruction, where hand –operated system is in use
c) Automatic opening of ventilation louvers whenever emergency generator starting/ in operation for power operated system where provided including fail to open operation.
d) Manual closing operation from outside the space, where open /closed indication clearly marked.

(Note: Applicable for vessel keel laid on or after 01 January 2017)

VENTILATION SYSTEM(IGF)

Examining the ventilation system, including portable ventilating equipment where fitted, for spaces containing fuel storage, fuel bunkering, and fuel supply units or components or associated systems, including air locks, pump rooms, compressor rooms, fuel preparation rooms, fuel valve rooms, control rooms and spaces containing gas burning equipment

Testing as far as practicable, alarms such as differential pressure and loss of pressure alarms.

Control, monitoring and safety system (IGF)

Confirming gas detection and other leakage detection equipment in compartments containing fuel storage, fuel bunkering, and fuel supply equipment or components or associated systems, including indicators and alarms, is in satisfactory operating condition.

Confirming the satisfactory operation of the control, monitoring and automatic shutdown systems of the fuel supply and bunkering systems.

Confirmed that calibration of the gas detection systems carried out in accordance with manufacturer requirement and record of same available.

Confirmation of shutdown of ESD protected machinery spaces operational and tested operationally as far as practicable.

MACHINERY VERIFICATION RUNS

Towards completion of Special/Continuous Survey of Machinery, trial of main & auxiliary machinery including the steering gear & controls carried out to confirm satisfactory operation (In afloat condition).

SEA TRIAL

In case of major repairs to main propulsion machinery or steering gear, confirmation that a sea trial has been carried out satisfactorily to confirm proper operation of the relevant machinery in all respects.

(Note: With effect from 1st July 2018, in case of major repairs to main propulsion machinery or steering gear, the scope of sea trial is to also include a test plan for astern response characteristics based on those required for such an equipment or system when fitted to the new ship. The tests are to be carried out at least over the manoeuvring range of the propulsion system and from all control positions. A test plan is to be provided by the manufacturer and accepted by the surveyor. If specific operational characteristics have been defined by the manufacturer, same is to be included in the test plan and the reversing characteristics of the propulsion plant, including the blade pitch control system of controllable pitch propellers, are to be demonstrated and recorded during trials.)

ELECTRICAL INSTALLATION

EMERGENCY SOURCE OF POWER

The operation of the emergency source(s) of electrical power, including their starting arrangement, the systems supplied, and when appropriate, their automatic operation as far as practicable, verification that all electrical equipments in dangerous zones is suitable for such locations, is in good condition and properly maintained. Emergency lights in good working condition.

Condition to be reported using number code as follows:

1. When examined found to be satisfactory and/or examined/tested satisfactory and/or confirmed arrangements exist in satisfactory condition. No repairs considered necessary this time.
2. Repairs now recommended and were carried out satisfactorily. After repairs found to be satisfactory and/or examined / tested satisfactorily and/or confirmed arrangements exist in satisfactory condition.
3. Repairs now recommended and remain outstanding.
4. Opportunity to examine/test was not provided this time. Remains outstanding.

NA - Not Applicable.

ELECTRICAL SYSTEM General examination visually and in operation, as feasible, of the main electrical machinery, the emergency sources of electrical power, the switch gear, other electrical equipment including the lighting system. The precautions provided against shock, fire and other hazards of electrical origin for proper maintenance
ELECTRICAL INSTALLATION AND ARRANGEMENT Confirmation that electrical equipment and cables in dangerous spaces and zones are suitable for such locations and in satisfactory condition and properly maintained. The electric motors driving ventilation fans are positioned outside ventilation duct when carriage of flammable product is intended and the ducts, in way of fans only, are of non sparking construction in dangerous zone.
INSULATION RESISTANCE Verification of insulation resistance of electrical equipment and cables in the dangerous zones and space (immediate past records may be accepted when the ship is not in a gas free state) where applicable, the Pipelines and Independent cargo tanks are Electrically bonded to Hull.
INTRINSICALLY SAFE SYSTEMS AND CIRCUITS Confirmation that intrinsically safe systems and circuits used for measurement, monitoring, control and communication purpose in all hazardous location are properly maintained.
MONITORING OF HARMONIC DISTORTATION Confirmation that equipment for continuous monitoring of harmonic distortion level is in good order, alarm tested, logging of measured value verified in engine log book or electronically in case where automation system fitted and found to satisfactory. (Note: Applicable for vessel keel laid on or after 01 July 2017 and on exiting ship retrofitted with harmonic filter on or after 01 July 2017.)
PROTECTION ARRANGEMENT FOR HARMONIC FILTER Confirmation that protection for harmonic filter, including alarm tested and found satisfactory. (Note: Applicable for vessel keel laid on or after 01 July 2017 and on exiting ship retrofitted with harmonic filter on or after 01 July 2017.)
HAZARDOUS AREA (IGF)
Examined that electrical equipment, bulkhead / deck penetration and access opening in hazardous area are maintained and in satisfactory condition
ELECTRICAL BONDING (IGF)
Examining electrical equipment including electrical bonding arrangements and bulkhead/deck penetrations including access openings in hazardous areas.
ALTERNATIVE DESIGN AND ARRANGEMENT
Where applicable, examination of alternative design and arrangement for machinery or electrical installations, low-flashpoint fuel storage and distribution systems, or fire safety, in accordance with the test inspection and maintenance requirements if any specified in the approved documentation is to be carried out.
FIREFIGHTING/PROTECTION ARRANGEMENTS
MAIN AND EMERGENCY FIRE PUMP Verification that each Fire pump (including starting and priming arrangements) is capable of producing the required two jets of water (whilst also permitting the simultaneous operation of foam system on tankers) whilst the required pressure is maintained in the fire main.
FIXED CARBON DIOXIDE FIRE-EXTINGUISHING SYSTEMS Examination of the fixed carbon dioxide fire-extinguishing systems for the protection of machinery spaces, cargo pump-rooms, where applicable, are provided with two separate controls, one for opening of the gas piping and one for discharging the gas from the storage container, each of them located in a release box clearly identified for the particular space.
FIRE PROTECTION ARRANGEMENTS Examination of the fire protection arrangements in cargo spaces and confirming, as far as practicable and as appropriate, the operation of the means of control provided for closing the various openings.
FIREMAINS, HYDRANTS, HOSES, NOZZLES AND APPLICATORS Condition of fire main (no soft patches or doublers) together with flanges and valves, hydrants, hoses, nozzles, applicators, spanners, relief valves and international shore connection.
READINESS OF FIRE HYDRANTS, HOSES Each hose complete with couplings, nozzle (dual-purpose nozzles where applicable) and tools kept ready for use.

Condition to be reported using number code as follows:

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2. Repairs now recommended and were carried out satisfactorily. After repairs found to be satisfactory and/or examined / tested satisfactorily and/or confirmed arrangements exist in satisfactory condition.
3. Repairs now recommended and remain outstanding.
4. Opportunity to examine/test was not provided this time. Remains outstanding.

NA - Not Applicable.

PORTABLE EXTINGUISHERS AND FOAM APPLICATORS Confirmation that portable fire extinguishers correspond to the fire control plan w.r.t. Number, type and location and that when examined were in good condition, fully charged and ready for use, confirming the condition of portable fire fighting equipment for the cargoes to be carried in the cargo area is satisfactory.
SPARE CHARGES Availability of spare charge/s for each portable extinguisher or additional portable extinguishers of the same type
FIRE AND/OR SMOKE DETECTION SYSTEM Examine for proper functioning and possible testing, any fire detection and alarm system and any sample extraction smoke detection system
DECK FOAM SYSTEM & CARGO PUMPROOM PROTECTION Verification that fixed fire fighting system for cargo pump room, that the deck foam system and deck sprinkler system are in good operating condition and means of operation marked. Check for adequate supply of Foam concentrate, testing that minimum number of jets of water at the required pressure in the fire main is obtained when the system is in operation. Examination of deck foam system for cargo area.
FIXED FIRE FIGHTING SYSTEM i) Examination of fire fighting system (including fixed fire fighting system for the machinery spaces) controls, piping, instructions and marking. Checking for evidence of proper maintenance and servicing including date of last systems tests, Fixed fire fighting system for cargo pump room. ii) Verification with regard to correct positioning(for in service condition) of safety pins where used on cylinder head discharge valves for fixed fire fighting CO2 system are in accordance with manufacture's instruction manual.
REMOTE STOPPING OF FANS, OIL PUMPS, ETC Verification that the remote controls for stopping fans and machinery in machinery spaces are in working order. Examination of the arrangements for remote closing of valves for oil fuel, lubricating oil and other flammable oils and confirming, as far as practicable and as appropriate, the operation of the valves on the tanks that contain oil fuel, lubricating oil and other flammable oils.
CLOSING ARRANGEMENTS FOR SKYLIGHTS, FLAPS ETC Examination of closing arrangements of ventilators, funnel annular spaces, skylights, doorways and tunnel where applicable, including condition of operating mechanism eg: wire ropes, hydraulic piping etc.
FIRE EXTINGUISHER FOR PAINT STAGE/ FLAMMABLE LOCKES Examination of the fire extinguishing systems for spaces containing paint and/or flammable liquids and deep fat cooking equipment in accommodation and service spaces, examination of fire safety requirements of any helicopter facilities.
GASEOUS FUEL FOR DOMESTIC PURPOSE Examining the arrangements for gaseous fuel for domestic purposes.
FIREMAN'S OUTFITS Confirmation that the fire fighters' outfits including its self-contained compressed air breathing apparatus and emergency escape breathing devices (EEBDs) are complete and in good condition and that the cylinders, including the spare cylinders, of any required self-contained breathing apparatus are suitably charged, and that on board means of recharging breathing apparatus cylinders used during drills or a suitable number of spare cylinders to replace those used are provided, and provision of two-way portable radiotelephone apparatus of an explosion-proof type or intrinsically safe.
FIRE DOORS Examination of any manual and automatic fire doors and proving their operations.
MEANS OF ESCAPE Confirmation that the means of escape from accommodation, machinery and other spaces are satisfactory.
POTENTIAL SOURCES OF IGNITION Confirmation that potential sources of ignition in or near the cargo pump room are eliminated, such as loose gear, combustible materials etc, there are no signs of undue leakage and access ladders are in satisfactory condition.
CONTINIOUS MONITORING Confirmation that the system for continuous monitoring of the concentration of flammable vapours is satisfactory.
SAMPLING POINTS OR DETECTOR HEADS Confirmation that sampling points or detector heads are located in suitable positions in order that potentially dangerous leakages are readily detected.

Condition to be reported using number code as follows:

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2. Repairs now recommended and were carried out satisfactorily. After repairs found to be satisfactory and/or examined / tested satisfactorily and/or confirmed arrangements exist in satisfactory condition.
3. Repairs now recommended and remain outstanding.
4. Opportunity to examine/test was not provided this time. Remains outstanding.

NA - Not Applicable.

FUEL SYSTEM(IGF)
FUEL HANDLING PIPING, MACHINERY AND EQUIPMENT
Examining and testing of piping, hoses, emergency shut-down valves, remote operating valves, relief valves, machinery and equipment for fuel storage, fuel bunkering, and fuel supply such as venting ,compressing, refrigerating, liquefying, heating, cooling or otherwise handling the fuel as far as practicable .
Confirmed that mean of inerting provided on board is in satisfactory condition.
Confirmation of stopping of pumps and compressor in case of emergency shut down of the system.
FUEL STORAGE SYSTEM
Examining the condition and arrangement of fuel storage, bunkering and supply systems including external examination of storage tank (including secondary barrier if fitted), internal examination of tank connection space and relief valves if accessible..
Verification of satisfactory operation of tank monitoring system, examination and testing of installed bilge alarms and means of drainage.
Examination and testing of the remote and local closing of the installed main tank valve for fuel storage system.
FUEL BUNKERING SYSTEM
Examining and testing of bunkering stations and the fuel bunkering system including operation of the fuel bunkering control, monitoring and shutdown systems.
FUEL SUPPLY SYSTEM
Examining and testing of fuel supply system including the fuel supply system control, monitoring and shut-down systems
Examining and testing of remote and local operation of master fuel valve for each engine compartment.
CARGO PUMP ROOM / OTHER CARGO HANDLING SPACES
ACCESS LADDERS AND RESCUE ARRANGEMENTS Verification of cargo pump room access ladders, railings and permanent rescue arrangements.
CARGO PUMP ROOM VENTILATION, CLEANLINESS Etc Examination of cargo pump room(s) spaces for freeness from potential sources of ignition; operation of the ventilation system (damper operation and flame screens) including interlocking arrangement to lighting. Verification that no oil leakages and no accumulation of oil in the cargo pump room. Leakages if any have been dealt and source of leakages rectified.
CARGO PUMP ROOM DRAINAGE ARRANGEMENT Verification of cargo pump room bilge system operable form outside the cargo pump rooms.
PUMP ROOM BULKHEAD AND PIPE TUNNEL IF FITED Examinations of all pump room bulkheads for signs of chemical leakage or fractures, the sealing arrangements of all penetrations of pump room bulkheads. Examination of condition of all piping systems.
CARGO PUMPS, PRESSURE GUAGES, VALVES Examination of cargo, bilge, ballast, stripping pumps for excessive gland seal leakage. Verification that installed pressure gauges on cargo discharge lines including those fitted outside the cargo pump room and level indicating systems are operational, verification that pumps, valves and pipelines are identified and distinctively marked.
CARGO HANDLING / CARGO CONTROL ROOMS
CARGO TANK GAUGING SYSTEM Verification of cargo tank level gauges, high level alarms and automatic high-liquid-level shut-off system.
LOACTION OF VENTING Examining the location of the vent outlets in respect of the height above the weather deck or the fore and aft gangway, from the nearest air intakes or openings to accommodation, service and machinery spaces and ignition sources are in satisfactory condition.
SAFETY ARRANGEMENTS RELATED TO CARGO
Examinations of gauging devices, high level alarms, valves associated with overflow control. Examination of cargo heating/cooling system sampling arrangements where fitted. Examination of the cargo transfer arrangements and confirming that any hoses are suitable for their intended purpose and mark with date of testing.
Verification of temperature devices and alarms, removable pipe lengths or other approved equipment necessary for cargo separation. Verification that the ventilation system including portable equipment is operational. Verification that arrangements are made for sufficient inert/padding/drying gas to be carried or generated to compensate for normal losses and that means are provided for monitoring of ullage spaces. Verification that arrangements are made for sufficient medium

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to be carried where drying agents are used on air inlets to cargo tanks.
Confirmation that the protective clothing for crew engaged in loading and discharging operations and its stowage is in a satisfactory condition.
SAFETY EQUIPMENT & BREATHING APPARATUS
Confirmation that safety equipment and associated breathing apparatus and associated air supplies and, when appropriate, emergency-escape respiratory and eye protection, are in a satisfactory condition and are properly stowed.
PORTABLE GAS DETECTION INSTRUMENTS
Verify that at least two for toxic & flammable, fixed or portable type gas detection instruments are on board and arrangements have been made for the supply of the appropriate vapour detection tubes.
FIRST AID EQUIPMENT
Confirmation that medical first-aid equipment, including stretchers and oxygen resuscitation equipment are in a satisfactory condition.
Confirmation that arrangements have been made for the antidotes for the cargoes actually carried to be on board.
DECONTAMINATION AND EYE WASH ARRANGEMENT Functional verification of decontamination and eye wash arrangements including arrangements against freezing
CARGO SAMPLE Confirmation that stowage of cargo sample is in satisfactory condition
GENERAL
HOUSE KEEPING i)Verification that general housekeeping / cleanliness in engine room, pump room, on deck, accommodation, hospital, galley, wash basins and toilets are satisfactory. ii) Confirmation that no loose drums and no heavy items without securing/lashing on deck. iii) Confirmation that Spare anchor where provided, its lashing bracket in good condition.
FLAG SPECIFIC REQUIREMENTS Confirmation that flag specific requirements/instructions, if any are complied with. Please Provide details in Remark section.
H.O. INSTRUCTIONS Confirmation that H.O. Instructions pertaining to this survey if any communicated separately, have been compiled with. Please Provide details in Remark section.
ADDITIONAL REQUIREMENTS TOWARDS CLASS INTERMEDIATE SURVEY
CARGO, CARGO WASHING, BUNKER, BALLAST, STEAM AND VENT PIPING **i**) Examination of cargo, cargo washing, bunker, ballast, steam and vent piping on weather decks as well as vent masts and headers to confirm their satisfactory condition. (If upon examination there is any doubt as to the condition of the piping, the pipe is to be pressure tested, thickness gauged or both. Particular attention is to be paid to any repairs such as welded doublers). ii)Where the scope of the intermediate survey is to the same extent as previous special survey, examination of cargo piping on deck, cargo and ballast piping systems within the tanks and spaces and operational testing to working pressure to confirm these are in satisfactory condition. (Note: Special attention is to be given to ballast piping in cargo tanks and cargo piping in ballast tanks and void spaces and when the piping, including valves and fittings are open during repair periods, same to be examined internally).
ELECTRICAL EQUIPMENT IN DANGEROUS ZONES Confirmation that general Examination and testing of insulation resistance of electrical circuits in dangerous zones are maintained in satisfactory condition (Note: i) In cases where a proper record of testing is maintained, consideration should be given for accepting recent readings. ii) These measurements are taken when the ship is in a gas free condition and to be carried out within an acceptable time period).
SAFETY ARRANGEMENTS RELATED TO CARGO **1**) Verification that vent line drainage arrangements, cargo heating/cooling system and ship's cargo hoses are (approved) and maintained in efficient condition. 2) Verification that where applicable, pipelines and independent cargo tanks are electrically bonded to the hull and maintained in efficient condition. 3) Confirmation that spares are provided for cargo area mechanical ventilation fans and are in satisfactory condition. 4) Verification that equipment for personal protection is maintained satisfactorily. 5) External examination and confirmation that the pumping and piping systems, including stripping system (if fitted) and

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associated equipment remain as approved and maintained satisfactorily.

6) Externally examination of the tank wash piping and confirming that the type, capacity, number and arrangement of the tank washing machines are as approved and maintained satisfactorily.

7) Externally examination of the wash water heating system, underwater discharge arrangement and heating system required for solidifying and high viscosity substances (as far as practicable) for satisfactory condition.

8) Confirming that the means of controlling the rate of discharge of the residue, flow rate indicating device and ventilation equipment for residue removal is as approved and satisfactory.

9) Confirming that cargo tank high level alarms and discharge outlets (if possible) are satisfactory.

10) Confirmation from the cargo record book that the pumping and stripping arrangements have been emptying the tanks efficiently and all are in working order.

11) Confirming the satisfactory operation of the recording device, as fitted and verifying by an actual flow test that it has an accuracy of ± 15% or better.

SAFETY SYSTEM(IGF)

Examining and testing gas detectors, temperature sensors, pressure sensors, level indicators, and other equipment providing input to the fuel safety system, including verification of the response upon fault conditions,

ADDITIONAL REQUIREMENTS TOWARDS SPECIAL SURVEYS

AIR PIPES

Internal Examination of Automatic air pipe heads at special survey as required by IRS Rules.

MOORING ROPES AND TOW LINES

Confirmation that sufficient mooring ropes and tow lines as required by rules are provided onboard.

MEANS OF EMBARKATION AND DISEMBARKATION

Accommodation ladders, gangways and its winches incl. brake system are operationally tested with specified maximum operation load in accordance with IRS Rules.

CARGO AND BALLAST PIPING SYSTEM

1) Examination of cargo piping on deck, cargo and ballast piping systems within the tanks and spaces and operational testing to working pressure to confirm these are in satisfactory condition. (Note: Special attention is to be given to ballast piping in cargo tanks and cargo piping in ballast tanks and void spaces and when the piping, including valves and fittings are open during repair periods, same to be examined internally)

2) For chemical tankers exceeding 10 years of age, confirmation that selected steel cargo pipes outside cargo tanks and ballast pipes passing through cargo tanks are thickness measured/internally examined and pressure tested to the maximum working pressure with satisfactory results (Note: Special attention is to be given to cargo/slop discharge piping through ballast tanks and void spaces).

PRESSURE VACUUM VALVES

Confirming that pressure vacuum valves connected to cargo tanks are examined in open condition, tested for the setting, and found satisfactory

ADDITIONAL REQUIREMENT FOR IGF

FUEL HANDLING AND PIPING

Examining of all piping for fuel storage, fuel bunkering, and fuel supply such as venting, compressing, refrigerating, liquefying, heating storing, burning or otherwise handling the fuel and liquid nitrogen installations, Confirmation of removal of insulation from the piping and opening for examination and hydrostatic test of suspected pipeline as necessary, and leak test of complete piping after reassembly carried out and found satisfactory.

FUEL VALVES

Examining and testing of emergency shut-down valves, check valves, block and bleed valves, master gas valves, remote operating valves, isolating valves for pressure relief valves in the fuel storage, fuel bunkering, and fuel supply piping systems, with randomly selected valves being opened for examination.

PRESSURE RELIEF VALVES

Examining pressure relief valves connected to fuel storage tanks, connecting pipes & venting system checked in open condition, tested for the setting, and found satisfactory.

Confirmation that pressure relief valves in fuel supply/bunker lines, checked in open condition for internal examination, tested for the setting and found satisfactory.

(Note: Where proper record of continuous overhaul and resetting of individually identifiable relief is maintained, consideration to be given to acceptance on the basis of opening, internal examination, and testing of representative sampling of valves, including each size and type of valves in use, provided logbook evidence that remaining valve have been overhauled and tested since crediting of the previous special survey.)

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Confirmation that pressure/Vacuum relief valves or devices for interbarrier spaces and hold spaces, examined in open condition, tested for setting and found satisfactory.
FUEL STORAGE TANK
Examining of fuel storage tanks internally in accordance with an approved survey plan, visual examination of tank insulation and tank support arrangement, NDT of suspected area if required. (Note: Vacuum insulated independent fuel storage tank of type C need not be examined and record of vacuum monitoring system be examined and record to be reviewed.)
FUEL HANDLING EQUIPMENT
Examining of fuel pumps, compressors, process pressure vessels, inert gas generators, heat exchangers and other components used in connection with fuel handling.
ELECTRICAL EQUIPMENT
Confirmed that electrical equipment fitted in hazardous area are certified safe type and are maintained in satisfactory condition
Confirmed that electrical cable installed in hazardous area are continuous and are in satisfactory condition.
Examining and functional testing of pressurized equipment and associated alarms and testing of system to de-energization electrical equipment, which are not certified for use in hazardous areas
Verified that insulation resistance of the equipment, electrical circuit terminating in or passing through hazardous area carried out and meeting the requirement.
SAFETY SYSTEM
Examining and testing gas detectors, temperature sensors, pressure sensors, level indicators, and other equipment providing input to the fuel safety system, including verification of the response upon fault conditions,
Confirmation that calibrations of pressure, temperature and level indicating equipment in accordance with the manufacturer's requirements carried out and record for same available.

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